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10/757,446	01/15/2004	James S. Schutzbach	06-1176.58	4116

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EXAMINER	
SIEVERS, LISA C	

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2863	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 10/757,446	Applicant(s) SCHUTZBACH ET AL.	
	Examiner Lisa C. Sievers	Art Unit 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 17-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 17-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 1/3/2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any Patent Number 6,757,623 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Objections

Claims 2 (amended) and 12 are objected to because of the following informalities:

2. Claim 2 (amended) recites the limitation, "the at least one communications link." There is insufficient antecedent basis for this limitation in these claims.

3. Claim 12 recites the limitation, "the increments." There is insufficient antecedent basis for this limitation in these claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 (amended), 2 (amended), 3 – 4, 5 (amended), 6 – 13 and 17 (amended) - 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petroff (4211111) in view of Jewell et al. (5367911).

With respect to claim 1 (amended), Petroff (4211111) teaches a method of analyzing flow of a substance in a sewer network, comprising: collecting first data representative a first flow velocity of a substance at a first location in a sewer network; and collecting second data representative of a second flow velocity of the substance at a second location in the sewer network. (Petroff (4211111), col. 3, lines 54 – 60; col. 6, line 50 – col. 7, line 35)

With respect to claim 1 (amended), Petroff (4211111) does not teach determining, by a processor, a travel time corresponding to the time it takes for the substance to travel between the first location and the second location, using the first data, the second data, and a constant.

With respect to claim 2 (amended), does not teach detecting a first flow volume at the first location at a first time; detecting a second flow volume at the second location at a second time, the second time being a function of the first time and the travel time; transmitting, via the at least one communications link, the first flow volume and the second flow volume to a processor; and determining, by a processor, a net flow corresponding to a difference between the second flow volume and the first flow volume.

With respect to claim 3, Petroff (4211111) does not teach wherein the determining step requires no additional data relating to the sewer network or the substance.

With respect to claim 4, Petroff (4211111) does not teach wherein the determining step comprises dividing the constant by a sum or an average of the first data and the second data.

With respect to claim 5 (amended), Petroff (4211111) does not teach wherein the constant corresponds to historic flow volume data from a first flow meter for the first location and historic flow volume data from a second flow meter for the second location, each of said historic flow volume data relating to a plurality of time increments.

With respect to claim 6, Petroff (4211111) does not teach developing a distribution of first flow volume data over a period of time and a distribution of second flow volume data over the period of time, and wherein the constant corresponds to a goodness of fit test performed on the distributions.

With respect to claim 7, Petroff (4211111) does not teach wherein the processor is integral with a flow meter that is located at the first location or the second location.

With respect to claim 1 (amended), Jewell et al. (5367911) teaches analyzing flow of a substance in a pipeline (Jewell et al. (5367911), col. 4, lines 38 – 43), comprising: collecting first data representative a first flow velocity of a substance at a first location in a pipeline; collecting second data representative of a second flow velocity of the substance at a second location in the pipeline; and determining, by a processor, a travel time corresponding to the time it takes for the substance to travel between the first location and the second location, using the first data, the second data, and a constant. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 7, lines 1 – 7 and 58 – 61; col. 11, lines 50 – 57; col. 12, lines 56 – 64)

With respect to claim 2 (amended), Jewell et al. (5367911) additionally teaches detecting a first flow volume at the first location at a first time; detecting a second flow volume at the second location at a second time, the second time being a function of the first time and the travel time; transmitting, via the at least one communications link [18, 20], the first flow volume and the second flow volume to a processor [22]; and determining, by a processor [22], a net flow corresponding to a difference between the second flow volume and the first flow volume. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 7, lines 1 – 7)

With respect to claim 3, Jewell et al. (5367911) additionally teaches wherein the determining step requires no additional data relating to the sewer network or the substance. (Jewell et al. (5367911), col. 6, line 66 – col. 7, line 7)

With respect to claim 4, Jewell et al. (5367911) additionally teaches wherein the determining step comprises dividing the constant by a sum or an average of the first data and the second data. (Jewell et al. (5367911), col. 2, lines 33 – 57)

With respect to claim 5 (amended), Jewell et al. (5367911) additionally teaches wherein the constant corresponds to historic flow volume data from a first flow meter for the first location and historic flow volume data from a second flow meter for the second location, each of said historic flow volume data relating to a plurality of time increments. (Jewell et al. (5367911), col. 2, lines 33 – 57; col.7, lines 1 – 14)

With respect to claim 6, Jewell et al. (5367911) additionally teaches developing a distribution of first flow volume data over a period of time and a distribution of second flow volume data over the period of time, and wherein the constant corresponds to a goodness of fit test performed on the distributions. (Jewell et al. (5367911), col. 2, lines 33 – 57; col.7, lines 1 – 14)

With respect to claim 7, Jewell et al. (5367911) additionally teaches wherein the processor is integral with a flow meter that is located at the first location or the second location. (Jewell et al. (5367911), col. 5, lines 23 – 35)

With respect to claim 8, Petroff (4211111) teaches a system for analyzing flow of a substance between a first location and a second location, comprising: a first meter capable of detecting a first flow velocity at a first location; and a second meter capable of detecting a second flow velocity at a second location; wherein the first meter and the second meter are in communication with a processor. (Petroff (4211111), col. 3, lines 54 – 60; col. 6, line 50 – col. 7, line 35)

With respect to claim 11, Petroff (4211111) additionally teaches wherein the first location and the second location are locations within a sewer network. (Petroff (4211111), col. 3, lines 54 – 60)

With respect to claim 8, Petroff (4211111) does not teach wherein the processor is programmed to derive a travel time of a flow from the first location to the second location using the first flow velocity, the second flow velocity, and a constant.

With respect to claim 9, Petroff (4211111) does not teach wherein the first meter is also capable of detecting a first flow volume at the first location at a first time, the second meter is also capable of detecting a second flow volume at the second location at a second time, the second time corresponds to a sum of the first time and the travel time, and the processor is further programmed to determine a net flow based on the difference between the second flow volume and the flow volume.

With respect to claim 10, does not teach wherein the processor does not require additional data relating to the flow or the locations.

With respect to claim 12, Petroff (4211111) additionally teaches wherein the constant corresponds to historic flow volume data from the first meter for the first location and historic flow volume data from the second meter for the second location, each of said historic flow volume data corresponding to a plurality of the increments.

With respect to claim 13, Petroff (4211111) does not teach wherein the processor is integral with the first or second meter.

With respect to claim 8, Jewell et al. (5367911) teaches wherein the processor is programmed to derive a travel time of a flow from the first location to the second location using the first flow velocity, the second flow velocity, and a constant. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 7, lines 1 – 7 and 58 – 61; col. 11, lines 50 – 57; col. 12, lines 56 – 64)

With respect to claim 9, Jewell et al. (5367911) teaches wherein the first meter is also capable of detecting a first flow volume at the first location at a first time, the second meter is also capable of detecting a second flow volume at the second location at a second time, the second time corresponds to a sum of the first time and the travel time, and the processor is further programmed to determine a net flow based on the difference between the second flow volume and the flow volume. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 7, lines 1 – 7)

With respect to claim 10, Jewell et al. (5367911) teaches wherein the processor does not require additional data relating to the flow or the locations. (Jewell et al. (5367911), col. 6, line 66 – col. 7, line 7)

With respect to claim 12, Jewell et al. (5367911) teaches wherein the constant corresponds to historic flow volume data from the first meter for the first location and historic flow volume data from the second meter for the second location, each of said historic flow volume data corresponding to a plurality of the increments. (Jewell et al. (5367911), col. 2, lines 33 – 57; col.7, lines 1 – 14)

With respect to claim 13, Jewell et al. (5367911) teaches wherein the processor is integral with the first or second meter. (Jewell et al. (5367911), col. 5, lines 23 – 35)

It would have been obvious to one of ordinary skill in the art, at the time the invention was made for Petroff (4211111) to have utilized the sensing technique of Jewell et al. (5367911) because it can be used for obtaining measurements within a pipeline without the need for flowmeter apparatus exterior to, or even within the wall of, the pipeline at the location at which measurements are taken.

With respect to claim 17 (amended), Petroff (4211111) teaches a method of analyzing flow of a substance between a first location and a second location, comprising: collecting a first set of flow volume data at a first location over a plurality of time increments; collecting a second set of flow volume data at a second location over the plurality of time increments (figures 3 and 5, Petroff (4211111), col. 4, lines 40 – 44); and detecting a first flow velocity at the first location; detecting a second flow velocity at the second location (Petroff (4211111), col. 3, lines 54 – 60; col. 6, line 50 – col. 7, line 35).

With respect to claim 17 (amended), Petroff (4211111) does not teach identifying a first distribution of the first set of flow volume data over time; identifying a second distribution of the second set of flow volume data over time; identifying a constant corresponding to a relation of the first distribution and the second distribution; and determining a transport time corresponding to a transport of a substance from the first location using the first flow velocity, the second flow velocity, and the constant, wherein the determining step does not require additional data.

With respect to claim 18, Petroff (4211111) does not teach detecting, using the first flow meter at a first time, an upstream flow volume; detecting, using the second flow

meter at a second time, a downstream flow volume, the second time corresponding to a sum of the first time and the transport time, and calculating a net flow corresponding to a difference between the downstream flow volume and the upstream flow volume.

With respect to claim 19, Petroff (4211111) does not teach wherein the relation in the identifying step comprises a goodness of fit test.

With respect to claim 17 (amended), Jewell et al. (5367911) teaches identifying a first distribution of the first set of flow volume data over time; identifying a second distribution of the second set of flow volume data over time; identifying a constant corresponding to a relation of the first distribution and the second distribution (Jewell et al. (5367911), col. 2, lines 33 – 57; col.7, lines 1 – 14); and determining a transport time corresponding to a transport of a substance from the first location using the first flow velocity, the second flow velocity, and the constant, wherein the determining step does not require additional data. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 6, line 66 - col. 7, line 7; col. 7, lines 58 – 61; col. 11, lines 50 – 57; col. 12, lines 56 – 64)

With respect to claim 18, Jewell et al. (5367911) teaches detecting, using the first flow meter at a first time, an upstream flow volume; detecting, using the second flow meter at a second time, a downstream flow volume, the second time corresponding to a sum of the first time and the transport time, and calculating a net flow corresponding to a difference between the downstream flow volume and the upstream flow volume. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 7, lines 1 – 7)

With respect to claim 19, Jewell et al. (5367911) teaches wherein the relation in the identifying step comprises a goodness of fit test. (Jewell et al. (5367911), col. 2, lines 33 – 57; col.7, lines 1 – 14)

It would have been obvious to one of ordinary skill in the art, at the time the invention was made for Petroff (4211111) to have utilized the sensing technique of Jewell et al. (5367911) because it can be used for obtaining measurements within a pipeline without the need for flowmeter apparatus exterior to, or even within the wall of, the pipeline at the location at which measurements are taken.

With respect to claim 20, Petroff (4211111) teaches a method of analyzing flow of a substance in a sewer network, comprising: collecting, using a plurality of upstream flow meters, a plurality of sets of upstream flow volume data, each corresponding to each upstream flow meter over a period of time; collecting, using a downstream flow meter, a set of downstream flow volume data over the period of time (Petroff (4211111), figure 5, col. 4, lines 40 – 44); and detecting a first flow velocity at a upstream location; detecting a second flow velocity at a downstream location corresponding to the downstream flow meter (Petroff (4211111), col. 3, lines 54 – 60; col. 6, line 50 – col. 7, line 35).

With respect to claim 22, Petroff (4211111) additionally teaches wherein the upstream location corresponds to a location of one of the plurality of upstream flow meters. (Petroff (4211111), figure 3)

With respect to claim 20, Petroff (4211111) does not teach identifying a plurality of upstream distributions, each corresponding to a set of upstream flow volume data over time; identifying a downstream distribution corresponding to the set of downstream flow volume data over time; identifying a constant corresponding to a relation of the upstream distributions and the downstream distribution; and determining a transport time corresponding to transport of a substance from the upstream location to the downstream location using the first flow velocity, the second flow velocity, and the constant, wherein the determining step does not require additional data.

With respect to claim 21, Petroff (4211111) does not teach detecting, using a first flow meter selected from the plurality of upstream flow meters at a first time, an upstream flow volume; detecting, using the downstream flow meter at a second time, a downstream flow volume, the second time corresponding to a sum of the first time and the travel time; and calculating a net flow corresponding to a difference between the downstream flow volume and the upstream flow volume.

With respect to claim 23, Petroff (4211111) does not teach wherein the relation in the identifying step comprises a goodness of fit test.

With respect to claim 20, Jewell et al. (5367911) teaches identifying a plurality of upstream distributions, each corresponding to a set of upstream flow volume data over

time; identifying a downstream distribution corresponding to the set of downstream flow volume data over time; identifying a constant corresponding to a relation of the upstream distributions and the downstream distribution (Jewell et al. (5367911), col. 2, lines 33 – 57; col.7, lines 1 – 14); and determining a transport time corresponding to transport of a substance from the upstream location to the downstream location using the first flow velocity, the second flow velocity, and the constant, wherein the determining step does not require additional data. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 6, line 66 - col. 7, line 7; col. 7, lines 58 – 61; col. 11, lines 50 – 57; col. 12, lines 56 – 64)

With respect to claim 21, Jewell et al. (5367911) teaches detecting, using a first flow meter selected from the plurality of upstream flow meters at a first time, an upstream flow volume; detecting, using the downstream flow meter at a second time, a downstream flow volume, the second time corresponding to a sum of the first time and the travel time; and calculating a net flow corresponding to a difference between the downstream flow volume and the upstream flow volume. (Jewell et al. (5367911), figure 1; claim 7; col. 5, lines 15 – 20; col. 7, lines 1 – 7)

With respect to claim 23, Jewell et al. (5367911) teaches wherein the relation in the identifying step comprises a goodness of fit test. (Jewell et al. (5367911), col. 2, lines 33 – 57; col.7, lines 1 – 14)

It would have been obvious to one of ordinary skill in the art, at the time the invention was made for Petroff (4211111) to have utilized the sensing technique of Jewell et al. (5367911) because it can be used for obtaining measurements within a pipeline without the need for flowmeter apparatus exterior to, or even within the wall of, the pipeline at the location at which measurements are taken.

Response to Arguments

4. Applicant's arguments filed on 6/21/2007 have been fully considered. Applicant's arguments are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa C. Sievers whose telephone number is (571) 272-8052. The examiner can normally be reached on M-F, 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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